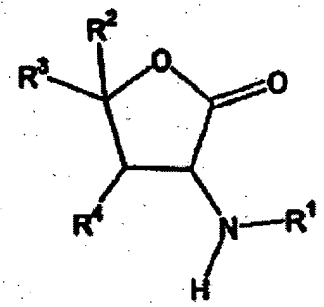
II. CLAIM AMENDMENTS

1. (Currently Amended) A method for treating a migrane in a subject in need thereof comprising administering ~~Use~~ of at least one substituted γ–lactone compound of the general formula I,



I

in which

R^1 denotes an optionally at least mono–substituted 2–pyridyl, 2-pyrimidyl, ~~2-pyrazolyl~~ 3-pyrazolyl, 2-quinolinyl or 2– pyrazinyl residue, which may also be fused with a saturated or at least partially unsaturated hydrocarbon ring system,

R^2 denotes an optionally at least mono–substituted, saturated, branched or unbranched aliphatic C_{1-10} residue or an optionally at least mono-substituted, at least partially unsaturated, branched or unbranched aliphatic C_{2-10} residue,

R^3 denotes an optionally at least mono–substituted aryl residue,

R^4 denotes H,

or

R^3 and R^4 together denote an optionally at least mono-substituted, saturated or at least mono-unsaturated aliphatic C_{3-7} residue, with the proviso that the residue R^2 in this case denotes an optionally at least mono-substituted aryl residue, an optionally at least mono-substituted, saturated, branched or unbranched aliphatic C_{1-10} residue or an optionally at least mono-substituted, at least partially unsaturated, branched or unbranched aliphatic C_{2-10} residue,

in the form of the racemates, diastereomers or enantiomers thereof as a free base or of a corresponding physiologically acceptable salt for the production of a pharmaceutical preparation for the treatment of migraine.

2. (Currently Amended) The method ~~Use~~ according to claim 1, characterised in that R^1 denotes an optionally at least mono-substituted 2- pyridyl-residue, which may also be fused with a saturated or at least partially unsaturated hydrocarbon ring system, preferably denotes a 2- pyridyl residue which is substituted at least in position 4.

3. (Currently Amended) The method ~~Use~~ according to claim 1, characterised in that R^2 denotes an optionally at least mono-substituted, saturated, branched or unbranched aliphatic C_{1-6}-residue.

4. (Currently Amended) The method ~~Use~~ according to claim 1, characterised in that R^3 denotes an optionally at least mono- substituted aryl residue and R^4 denotes H.

5. (Currently Amended) The method ~~Use~~ according to claim 1, characterised in that the compound used of the general formula I according to claim 1 comprises at least one compound selected from the group consisting of

5-(2,4-Dimethyl-phenyl)-3-(8-hydroxy-quinolin-2-ylamino)-5-methyl-dihydro-furan-2-one,

5-(3,4-Dimethyl-phenyl)-3-(4,6-dimethyl-pyridin-2-ylamino)-5-methyl-dihydro-furan-2-one,

5- (2,4-Dimethyl-phenyl)-3-(4,6-dimethyl-pyridin-2-ylamino)-5-methyl-dihydro-furan-2-one,

5-(4-Cyclohexyl-phenyl)-3-(4,6-dimethyl-pyridin-2-ylamino)-5-methyl-dihydro-furan-2-one,

5-(3,5-Dimethyl-phenyl)-3-(4,6-dimethyl-pyridin-2-ylamino)-5-methyl-dihydro-furan-2-one,

5-(3,4-Dimethyl-phenyl)-5-methyl-3-(4-methyl-pyridin-2-ylamino)-dihydro-furan-2-one,

5-(2,4-Dimethyl-phenyl)-5-methyl-3-(4-methyl-pyridin-2-ylamino)-dihydro-furan-2-one,

5-(4-Cyclohexyl-phenyl)-5-methyl-3-(4-methyl-pyridin-2-ylamino)-dihydro-furan-2-one,

5-Methyl-3-(quinolin-2-ylamino)-5-m-tolyl-dihydro-furan-2-one,

3-(4,6-Dimethyl-pyridin-2-ylamino)-5-methyl-5-p-tolyl-dihydro-furan-2-one,

3-(4,6-Dimethyl-pyridin-2-ylamino)-5-methyl-5-m-tolyl-dihydro-furan-2-one,

3-(4,6-Dimethyl-pyridin-2-ylamino)-5-(4-ethoxy-phenyl)-5-methyl-dihydro-furan-2-one,

4-[4-(3-Bromo-5-methyl-pyridin-2-ylamino)-2-methyl-5-oxo-tetrahydro-furan-2-yl]-benzonitrile,

3-(3-Bromo-5-methyl-pyridin-2-ylamino)-5-(4-tert-butyl-phenyl)-5-methyl-dihydro-furan-2-one,

5-(4-tert-Butyl-phenyl)-5-methyl-3-(6-propyl-pyridin-2-ylamino)-dihydro-furan-2-one,

5-(4-tert-Butyl-phenyl)-5-methyl-3-(4-methyl-3-nitro-pyridin-2-ylamino)-dihydro-furan-2-one,

3-(5-Bromo-6-methyl-pyridin-2-ylamino)-5-methyl-5-(4-phenoxy-phenyl)-dihydro-furan-2-one,

5-(4-tert-Butyl-phenyl)-5-methyl-3-(3-nitro-pyridin-2-ylamino)-dihydro-furan-2-one,

3-(3-Benzyloxy-pyridin-2-ylamino)-5-methyl-5-(4-phenoxy-phenyl)-dihydro-furan-2-one,

3-(3-Benzyloxy-pyridin-2-ylamino)-5-(4-tert-butyl-phenyl)-5-methyl-dihydro-furan-2-one,

3-(4,6-Dimethyl-pyridin-2-ylamino)-5-methyl-5-(4-phenoxy-phenyl)-dihydro-furan-2-one,

5-(4-tert-Butyl-phenyl)-3-(4, 6-dimethyl-pyridin-2-ylamino)-5-methyl-dihydrofuran-2-one,

5-Methyl-3- (4-methyl-pyridin-2-ylamino)-5-(4-phenoxy-phenyl)-dihydro-furan-2-one,

5-(4-tert-Butyl-phenyl)-5-methyl-3-(4-methyl-pyridin-2-ylamino)-dihydro-furan-2-one,

4-[4-(5-Bromo-3-nitro-pyridin-2-ylamino)-2-methyl-5-oxo-tetrahydro-furan-2-yl]-benzonitrile,

4-[4-(5-Bromo-pyrimidin-2-ylamino)-2-methyl-5-oxo-tetrahydro-furan-2-yl]-benzonitrile,

5-Benzo[b]thiophen-2-yl-5-methyl-3-(6-propyl-pyridin-2-ylamino)-dihydro-furan-2-one,

3-(4,6-Dimethyl-pyridin-2-ylamino)-5-(4-isopropyl-phenyl)-5-methyl-dihydro-furan-2-one,

5-Benzofuran-2-yl-3-(4,6-dimethyl-pyridin-2-ylamino)-5-methyl-dihydro-furan-2-one,

5-Benzo[b]thiophen-2-yl-5-methyl-3-(4-methyl-pyridin-2-ylamino)-dihydro-furan-2-one,

5-Benzofuran-2-yl-5-methyl-3-(4-methyl-pyridin-2-ylamino)-dihydro-furan-2-one,

3-(5-Benzo[1,3]dioxol-5-yl-5-methyl-2-oxo- tetrahydro-furan-3-ylamino)-1H-pyrazole-4- carbonitrile,

3-(5-Benzo[1,3]dioxol-5-yl-5-methyl-2-oxo-tetrahydro-furan-3-ylamino)-1H-pyrazole-4-carboxylic acid ethyl ester,

5-Benzo[1, 3]dioxol-5-yl-5-methyl-3-(3-nitro-pyridin-2-ylamino)-dihydro-furan-2-one,

3-(4,6-Dimethyl-pyridin-2-ylamino)-5-methyl-5-(5,6,7,8-tetrahydro-naphthalen-2-yl)-dihydro-furan-2-one,

3-(4,6-Dimethyl-pyridin-2-ylamino)-5-methyl-5-naphthalen-2-yl-dihydro-furan-2-one,

5-Benzo[1,3]dioxol-5-yl-5-methyl-3-(4-methyl-pyridin-2-ylamino)-dihydro-furan-2-one,

5-Methyl-3-(4-methyl-pyridin-2-ylamino)-5-(5,6,7,8-tetrahydro-naphthalen-2-yl)-dihydro-furan-2-one,

5-Benzo[1,3]dioxol-5-yl-5-methyl-3-(5-methyl-pyridin-2-ylamino)-dihydro-furan-2-one,

5-Benzo[1,3]dioxol-5-yl-5-methyl-3-(6-methyl-pyridin-2-ylamino)-dihydro-furan-2-one,

3-(5-Bromo-3-nitro-pyridin-2-ylamino)-5-methyl-5-(5,6,7,8-tetrahydro-naphthalen-2-yl)-dihydro-furan-2-one,

3-(5-Bromo-3-nitro-pyridin-2-ylamino)-5-isopropyl-5-phenyl-dihydro-furan-2-one,

5-Isopropyl-3-(5-nitro-pyridin-2-ylamino)-5-phenyl-dihydro-furan-2-one,

5-Methyl-5-naphthalen-2-yl-3-(5-nitro-pyridin-2-ylamino)-dihydro-furan-2-one,

5-Isopropyl-5-phenyl-3-(pyrimidin-2-ylamino)-dihydrofuran-2-one,

3-[5-(4-Iodo-phenyl)-5-methyl-2-oxo-tetrahydro-furan-3-ylamino]-1H-pyrazole-4-carboxylic acid ethyl ester,

5-(4-Bromo-phenyl)-3-(5-bromo-pyridin-2-ylamino)-5-methyl-dihydro-furan-2-one,

3-(3-Bromo-5-methyl-pyridin-2-ylamino)-5-methyl-5-naphthalen-1-yl-dihydro-furan-2-one,

5-Methyl-5-naphthalen-1-yl-3-(6-propyl-pyridin-2-ylamino)-dihydro-furan-2-one,

5-(3-Chloro-phenyl)-5-methyl-3-(6-propyl-pyridin-2-ylamino)-dihydro-furan-2-one,

5-(3-Chloro-phenyl)-5-methyl-3-(4-methyl-3-nitro-pyridin-2-ylamino)-dihydro-furan-2-one,

5-(4-Bromo-phenyl)-5-methyl-3-(4-methyl-3-nitro-pyridin-2-ylamino)-dihydro-furan-2-one,

3-(5-Bromo-6-methyl-pyridin-2-ylamino)-5-methyl-5-naphthalen-1-yl-dihydro-furan-2-one,

3-(5-Bromo-6-methyl-pyridin-2-ylamino)-5-(4-iodo-phenyl)-5-methyl-dihydro-furan-2-one,

3-(3-Benzyloxy-pyridin-2-ylamino)-5-(4-iodo-phenyl)-5-methyl-dihydro-furan-2-one,

3-(3-Benzyloxy-pyridin-2-ylamino)-5-(4-bromo-phenyl)-5-methyl-dihydro-furan-2-one,

3-(4,6-Dimethyl-pyridin-2-ylamino)-5-(4-iodo-phenyl)-5-methyl-dihydro-furan-2-one,

5-(3-Chloro-phenyl)-3-(4, 6-dimethyl-pyridin-2-ylamino)-5-methyl-dihydro-furan-2-one,

5-(4-Bromo-phenyl)-5-methyl-3-(3-methyl- pyridin-2-ylamino)-dihydro-furan-2-one,

5-(4-Bromo-phenyl)-5-methyl-3-(4-methyl-pyridin-2-ylamino)-dihydro-furan-2-one,

2-[5-(3,5-Dimethoxy-phenyl)-5-methyl-2-oxo-tetrahydro-furan-3-ylamino]-4-propyl-pyrimidine-5-carboxylic acid ethyl ester,

3-(4-Bromo-1H-pyrazol-3-ylamino)-5-(3,5-dimethoxy-phenyl)-5-methyl-dihydro-furan-2-one,

3-(4-Bromo-1H-pyrazol-3-ylamino)-5-(2-methoxy-phenyl)-5-methyl-dihydro-furan-2-one,

3-[5-(2,5-Dimethoxy-phenyl)-5-methyl-2-oxo-tetrahydro-furan-3-ylamino]-1H-pyrazole-4-carbonitrile,

3-[5-(2,5-Dimethoxy-phenyl)-5-methyl-2-oxo-tetrahydro-furan-3-ylamino]-5-methylsulfanyl-1H-pyrazole-4-carbonitrile,

5-(2,5-Dimethoxy-phenyl)-5-methyl-3-(pyridin-2-ylamino)-dihydro-furan-2-one,

5-(2-Methoxy-phenyl)-5-methyl-3-(pyridin-2-ylamino)-dihydro-furan-2-one,

3-(3-Chloro-5-trifluoromethyl-pyridin-2-ylamino)-5-(3,5-dimethoxy-phenyl)-5-methyl-dihydro-furan-2-one,

3-(3-Chloro-5-trifluoromethyl-pyridin-2-ylamino)-5-(2,5-dimethoxy-phenyl)-5-methyl-dihydro-furan-2-one,

3-(3,5-Dichloro-pyridin-2-ylamino)-5-(2-methoxy-phenyl)-5-methyl-dihydro-furan-2-one,

3-(3-Chloro-5-trifluoromethyl-pyridin-2-ylamino)-5-(2,4-dimethoxy-phenyl)-5-methyl-dihydro-furan-2-one,

3-(4,6-Dimethyl-pyridin-2-ylamino)-5-(3-methoxy-phenyl)-5-methyl-dihydro-furan-2-one,

3-(4,6-Dimethyl-pyridin-2-ylamino)-5-(4-methoxy-phenyl)-5-methyl-dihydro-furan-2-one,

5-(3,4-Dimethoxy-phenyl)-3-(4,6-dimethyl-pyridin-2-ylamino)-5-methyl-dihydro-furan-2-one,

5-(4-Methoxy-phenyl)-5-methyl-3-(4-methyl-pyridin-2-ylamino)-dihydro-furan-2-one,

5-(2,5-Dimethoxy-phenyl)-5-methyl-3-(pyrazin-2-ylamino)-dihydro-furan-2-one and

5-Methylsulfanyl-3-(2-oxo-5-phenyl-5-propyl-tetrahydro-furan-3-ylamino)-1H-pyrazole-4-carbonitrile

and the corresponding physiologically acceptable salts thereof, preferably the hydrochlorides thereof.

6. (Currently Amended) The method according to claim 1 ~~Use of~~ using at least one substituted γ-lactone compound of the general formula I ~~according to claim 1~~ for the production of a pharmaceutical preparation for the treatment of septic shock.

7. (Currently Amended) The method according to claim 1 ~~Use of~~ using at least one substituted γ-lactone compound of the general formula I ~~according to claim 1~~ for the production of a pharmaceutical preparation for the treatment of neurodegenerative diseases.

8. (Currently Amended) The method ~~Use~~ according to claim 7 for the production of a pharmaceutical preparation for the treatment of multiple sclerosis.

9. (Currently Amended) The method ~~Use~~ according to claim 7 for the production of a pharmaceutical preparation for the treatment of Parkinson's disease.

10. (Currently Amended) The method ~~Use~~ according to claim 7 for the production of a pharmaceutical preparation for the treatment of Alzheimer's disease.

11. (Currently Amended) The method ~~Use~~ according to claim 7 for the production of a pharmaceutical preparation for the treatment of Huntington's chorea.

12. (Currently Amended) The method according to claim 1 ~~Use of~~ using at least one substituted γ-lactone compound of the general formula I ~~according to claim 1~~ for the production of a pharmaceutical preparation for the treatment of inflammation.

13. (Currently Amended) The method according to claim 1 ~~Use of~~ using at least one substituted γ-lactone compound of the general formula I ~~according to claim 1~~ for the production of a pharmaceutical preparation for the treatment of inflammatory pain.

14. (Currently Amended) The method according to claim 1 ~~Use of~~ using at least one substituted γ-lactone compound of the general formula I ~~according to claim 1~~ for the production of a pharmaceutical preparation for the treatment of cerebral ischaemia.

15. (Currently Amended) The method according to claim 1 ~~Use of~~ using at least one substituted γ-lactone compound of the general formula I ~~according to claim 1~~ for the production of a pharmaceutical preparation for the treatment of diabetes.

16. (Currently Amended) The method according to claim 1 ~~Use of~~ using at least one substituted γ-lactone compound of the general formula I ~~according to claim 1~~ for the production of a pharmaceutical preparation for the treatment of meningitis.

17. (Currently Amended) The method according to claim 1 ~~Use of~~ using at least one substituted γ-lactone compound of the general formula I ~~according to claim 1~~ for the production of a pharmaceutical preparation for the treatment of arteriosclerosis.

18. (Currently Amended) The method according to claim 1 ~~Use of~~ using at least one substituted γ-lactone compound of the general formula I ~~according to claim 1~~ for the production of a pharmaceutical preparation for wound healing.

19. (Currently Amended) The method according to claim 1 ~~Use of~~ using at least one substituted γ-lactone compound of the general formula I ~~according to claim 1~~ for the production of a pharmaceutical preparation for the treatment of neoplastic diseases.

20. (Currently Amended) The method according to claim 1 ~~Use of~~ using at least one substituted γ-lactone compound of the general formula I ~~according to claim 1~~ for the production of a pharmaceutical preparation for the treatment of fungal diseases.